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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,508	06/15/2001	Christophe Boulanger	208944US2PCT	5836
22850	7590	11/02/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			TORRES, JUAN A	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary****Application No.**

09/856,508

**Applicant(s)**

BOULANGER ET AL.

**Examiner**

Juan A. Torres

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 1-5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10202004</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Drawings***

The drawings are objected to because it seems that FIG.2 to FIG.5 disagreed with the results of FIG.9A and 9B; FIG.10A and 10B; FIG.11A and 11B; and FIG.12A and 12B. If FIG.2 to FIG.5 are correct (how it seems to be) then FIG.10A and 10B; FIG.11A and 11B; and FIG.12A and 12B are opposite in the sense that 9A should be 9B, 9B should be 9A etc.. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the

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examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure as is presented in page 18 is objected to because has more than one paragraph and is not in the narrative form. Correction is required.

See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities:

In page 9 line 20, equation (7) is not clear what represents. It is not clear where the number 20 applies.

In page 10 line 7, equation (10) is not clear what represents. It is not clear where the number 10 applies.

In page 10 line 19, equation (11) is not clear what represents. It is not clear where the number 20 and A/B apply.

In page 11 line 30, equation (11) is not clear what represents. It is not clear where the number 30 applies.

In page 13, lines 6 to 9 it seems that the FIG. 9A and 9B shows the opposite that the disclosure teaches (see above in drawing objections).

In page 13, line 10 it seems that the FIG. 10A and 10B shows the opposite that the disclosure teaches (see above in drawing objections).

In page 13, line 12 it seems that the FIG. 11A, 11B, 12A and 12B shows the opposite that the disclosure teaches (see above in drawing objections).

Appropriate correction is required.

### ***Claim Objections***

Claim 1 is objected to because of the following informalities: in line 12 the recitation "method wherein the correction of the" is suggested to be deleted.

Claim 1 is objected to because of the following informalities: in line 13 the recitation "frequency shift comprises the following steps:" is suggested to be changed to "a method wherein the correction of the frequency shift comprises the following steps:".

Claim 1 is objected to because of the following informalities: in line 21 the recitation "this method being" is suggested to be changed to "this method is being further".

Claim 1 is objected to because of the following informalities: in line 28 the recitation ".difference" is suggested to be changed to "difference".

Claim 3 is objected to because of the following informalities: in line 3 the recitation "number- assuming" is suggested to be changed to "number that assume".

Claim 4 is objected to because of the following informalities: in line 2 the recitation "first and/or second channels" is suggested to be changed to "first and second components" because channel has not been mentioned before.

Claim 4 is objected to because of the following informalities: in line 3 the recitation "i.e." is suggested to be deleted because it is not appropriate language for a claim.

Claim 5 is objected to because of the following informalities: in line 2 the recitation "first and/or second channels" is suggested to be changed to "first and second components" because channel has not been mentioned before.

Claim 5 is objected to because of the following informalities: in line 3 the recitation "i.e." is suggested to be deleted because it is not appropriate language for a claim.

Appropriate correction is required.

***Allowable Subject Matter***

Claims 1-5 are allowable over prior art (if the above objections are overcome).

The following is an examiner's statement of reasons for allowance: claim 1-5 are allowed because the references cited fail to teach, as applicant has, a method for receiving spectrum spreading signals with frequency shift correction, where a signal is received comprising a preamble made up of a sequence of known symbols spread in frequency by a pseudo-random sequence comprising N chips, followed by a sequence of information symbols spread in frequency by said pseudo-random sequence; a base band signal is formed from the received signal; a correlation is performed between the

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base band signal and the pseudo-random sequence at least in the portion of the signal corresponding to the information symbols in order to obtain a correlation signal; a demodulation of the correlation signal is performed in order to obtain a demodulation signal; the information symbols are restored; the method for the correction of the frequency shift comprises the steps of a) in a first step, the correlation signal is processed in the portion corresponding to the preamble, in order to estimate the modulation period affecting this signal because of the frequency shift and a correcting signal with this estimated period is elaborated; b) in a second step, the signal is corrected before or after correlation in the portion corresponding to the information symbols, by means of said correcting signal, this method is being further characterized in that: 1) the base band signal, is divided into two components, a first component and a second component in quadrature with the first and a correlation is performed on each of these components in order to obtain two correlation components  $CORR(I)$  and  $CORR(Q)$ ; 2) a DOT signal is calculated which is the sum of two direct products of successive samples of the correlation components, as well as a CROSS signal which is the difference between two crossed products of successive samples of the correlation components; and 3) for estimating the period of the modulation, the ratio between a CROSS signal and a DOT signal is calculated at each symbol period, the arc for which the tangent is equal to this ratio is calculated, the inverse of this arc is calculated and multiplied by  $\pi N/2$ , as the applicant has claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kato et al. (US 5260969) disclose a first generating unit for generating a reference code, a second generating unit for generating a reference signal in synchronism with the reference code, a correlating unit for obtaining a correlation between a received signal and the reference code, and a decoding for decoding the received signal in accordance with the reference signal and a correlation output from the correlating unit. Mochizuki et al. (US 5856997) disclose a receiving apparatus that includes a base-band conversion circuit, a synchronizing circuit/code generator and a demodulator, the base-band conversion circuit converts a received signal into a base-band signal, the synchronizing circuit/code generator detects a spread code included in the received signal to generate a plurality of spread codes in synchronization with the spread code included in the received signal, and the demodulator uses the plurality of spread codes supplied by the synchronizing circuit/code generator to demodulate the base-band signal. Chow et al. (US 4481640) disclose the use of double detection, which gets of the Doppler effect using suitable encoding. Sturza (US 4706286) use the frequency mixing principle in the radio portion of the receivers for detecting and identifying Doppler frequency and phase information contained within a signal of the direct sequence spread spectrum type; Bi (US 5623485) uses a channel encoder processes data sequences into sufficiently short encoded data blocks to minimize any



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phase shifts at a receiver in a high mobility environment due to a Doppler frequency shift

### ***Conclusion***

This application is in condition for allowance except for the following formal matters:

See objections above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A Torres whose telephone number is (571) 272-3119. The examiner can normally be reached on Monday-Friday 9:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAT

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10/21/2004

M. Gh

MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER